

BUILDING CODE REVIEW
CITY AND COUNTY OF BROOMFIELD, COLORADO

Flatiron Crossing Mall and Village Tenant Finish
1 West Flatiron Circle, #2000

September 24, 2004

PROJECT DATA

TENANT:	Retailer	REVIEWER:	Janice A. Graham
CONTACT:	Joe Contractor	ARCHITECT:	Jane Architect Architect, AIA
PHONE:		PHONE:	
FAX:		FAX:	-

REVIEW CRITERIA

CONST. TYPE:	II-N, sprinklered	USE:	Mercantile
OCCUPANCY CLASSIFICATION:	M	TOTAL AREA:	5618 square feet

OCCUPANT LOADS

<u>ROOM</u>	<u>FLOOR AREA</u>	<u>OCCUPANT LOAD FACTOR</u>	<u>OCCUPANT LOAD</u>
Sales	4155	30	138
Office	125	100	1
Stockroom/Other	1463	300	5
Total Occupant Load:			144

APPLICABLE CODES

2003 *International Building Code*[®]
2003 *International Plumbing Code*[®]
2003 *International Mechanical Code*[®]
2002 *National Electrical Code*[®]
2003 *International Fire Code*[®]
2003 *International Energy Conservation Code*[®]
1998 *ICC/ANSI A117.1 Handicapped Accessibility Standards*[®]

**** NOTICE ****

Comments may be included referencing accessibility requirements from the *International Building Code*[®] as adopted by the City and County of Broomfield. These comments are not a review of the Americans with Disabilities Act of 1991. It remains the responsibility of the owner to provide access to the facility and to comply with all ADA requirements. Authority for enforcement of the ADA rests with the U.S. Department of Justice.

The following comments based on the 2003 edition of the *International Building Code*[®] need to be addressed on this set of plans. This correction list is not a building permit. The approval of plans and specifications does not permit the violation of any section of the *International Building Code*[®] or any federal, state, or local regulations.

BUILDING CODE COMMENTS

Comments Applicable to all mall and village tenant finish projects

- T-1 Approval from the mall landlord, Macerich/Westcor, is required prior to issuance of a building permit.
- T-2 The plans shall be wet-stamped and signed by a Colorado licensed architect or professional engineer.
- T-3 Any signs on the exterior of the mall building or parking lot sides of the Village require separate permits and approvals.
- T-4 Please submit complete fire sprinkler plans and hydraulic calculations along with one set of architectural plans to the North Metro Fire Rescue District for review prior to construction. Call 720-887-8217 for information.
- T-5 **The approved plans and a copy of the plan review shall be maintained on the jobsite available to the inspector as a part of the means for inspection in accordance with Section 109.5.**
- T-6 **There shall be a minimum of 10'-0" clear width to a height of 8 feet between any projection from a tenant space bordering the mall and the nearest kiosk, vending machine, bench display or other obstruction to egress travel in accordance with Section 402.5.1.**

- T-7 Please provide written verification of the height of storage intended in the stock areas. High-piled combustible stock has numerous other code requirements and will require additional review.
- T-8 The fire partition walls separating tenants shall be one-hour fire-resistive construction extending from the floor to the ceiling. Please note that openings in rated wall assemblies are limited in accordance with IBC Sections 712, 713, and 715. Steel electrical outlet boxes that do not exceed 16 square inches in area are permitted, provided that the area of such openings does not exceed 100 square inches for any 100 square feet of wall area. Outlet boxes on opposite sides of rated wall assemblies shall be separated by a horizontal distance of not less than 24 inches. Approved listed non-metallic outlet boxes may be used as noted in exception 2 of Section 712.3.2.
- T-9 For all rated wall assemblies, please specify the correct orientation of gypsum board as tested in the listed assemblies. This installation will be verified by inspection in the field. A pre-fire caulk inspection will be required for all penetrations of rated wall assemblies. At the time of inspection, a tested through-penetration fire stop detail shall be available on the jobsite for all penetration conditions.
- T-10 Interior non-loadbearing partitions within individual tenant spaces (which do not form corridor walls or tenant separations) may be constructed of noncombustible materials or of fire-retardant treated wood in accordance with Section 603.1. Wood that has not been fire-retardant treated is permitted **only** for trim, finishes, fixtures, or doors. Structural elements such as ceiling framing, decking, or storage lofts shall be noncombustible in accordance with Section 602.2 for type II-B buildings. In tenant separation walls and rated corridor walls fire-retardant treated wood is permitted within the one-hour fire-resistive wall assembly in accordance with Section 603.1. Please note for all locations shown on the plans.
- T-11 All walls framed from the slab to the structure above shall have adequate means to accommodate movement of the concrete slab and/or deflection of the structure. This head of wall slip-joint detail shall be a tested assembly and shall be submitted for review and approval for walls of fire-resistive construction. The amount of movement capability (compression or extension) shall be as recommended by the soils or structural engineer.
- T-12 Safety glazing should be provided at locations subject to human impact including: glazing in doors, glazing less than 18 inches above walking surfaces, or glazing within 2 feet of doors in a closed position in accordance with Section 2406.3. Please note for windows adjacent to doors.

- T-13 Please provide written documentation of the flame spread ratings for all wall and ceiling finishes in accordance with Section 803.
- T-14 All insulation materials, including facings, such as vapor barriers or breather papers installed within floor-ceiling assemblies, roof-ceiling assemblies, walls, crawl spaces or attics, shall have a flame spread rating not to exceed 25 and a smoke density rating not to exceed 450 when tested in accordance with ASTM E-84. Section 719.
- T-15 Foam plastic used for trim, décor, signs, or insulation shall comply with IBC Sections 402.14, 603.1, and 2603. Other plastics used in signs or other panels shall be approved plastics in accordance with Section 2602, and installed in accordance with Section 404.2.14, which limits the area of use. Please submit complete manufacturer's data to the building department for review prior to installation.
- T-16 Security grilles or doors that are a part of the required means of egress shall:
- remain in the full open position during the period of occupancy by the general public;
 - not be brought to a closed position when there are more than 10 persons occupying spaces served by a single exit or 50 persons occupying spaces served by more than one exit;
 - be openable from within the tenant space without the use of any special knowledge or effort where the space is occupied;
 - be limited so that when two or more exits are required, not more than one-half of the exits may be equipped with horizontal sliding or vertical rolling grilles or doors.
- See Section 402.11.
- T-17 Door hardware shall not require tight grasping or twisting of the wrist to operate in accordance with ICC/ANSI A117.1, 1998, Section 404.2.7. Door hardware shall be mounted 34 inches minimum and 48 inches maximum above the finished floor per ICC/ANSI A117.1, 1998, Section 404.2.7.
- T-18 Door surfaces within 10 inches of the floor shall be a smooth surface for the full width of the push side of the door. Any horizontal or vertical parts or joints shall be within $\frac{1}{16}$ inch of the same door plane in accordance with ICC/ANSI A117.1, 1998, Section 404.2.10.
- T-19 Tenant spaces over 1500 square feet shall provide restrooms available to the public with separate restroom facilities for men and women, both accessible by persons with disabilities in accordance with Section 2902. Tenant spaces 1500 square feet or smaller may have a single accessible unisex restroom. If the main entrance of the tenant space is less than 300 feet travel distance from the

mall public restrooms, no restroom in the space is required in accordance with Section 2902.6.1.

- T-20 The floor of toilet rooms should have a smooth, hard, nonabsorbent surface which extends upwards onto the walls at least 6 inches. The walls within 2 feet of the front and sides of the water closets and urinals should have a smooth, hard, nonabsorbent surface to a height of 4 feet, and except for structural elements, the materials used in such walls should be of a type that is not adversely affected by moisture per IBC Section 1210.
- T-21 The required ventilation, including outside air has been provided by the mall systems to the individual tenant space. Distribution and tempering of this ventilation air is by the tenant HVAC systems. Air handling units within the tenant space shall be provided with smoke detector shutoff installed in the return air duct or plenum upstream of any filters or outdoor air connections in accordance with IMC Section 606. Makeup air shall be provided for all exhaust fans or hoods in accordance with IMC Section 503.
- T-22 Each tenant shall provide permanent access to all mall equipment within the space; including valves, dampers, duct detectors, etc.
- T-23 Provide written verification that the existing floor or roof framing is capable of carrying the additional loads imposed by the new mechanical equipment.
- T-24 All supply and return ducts shall be insulated per IMC Section 604 and IECC Section 803.2.8. All joints, seams and connections in ductwork shall be securely fastened and sealed with welds, gaskets, listed mastics, or listed tapes in accordance with IECC Section 803.2.8.
- T-25 All food service tenants shall obtain approval from the Broomfield Environmental Health Department. Contact Gary Hague, 720-887-2232.
- T-26 All food service tenants require a full grease interceptor in accordance with the International Plumbing Code unless a waiver has been obtained from the City and County of Broomfield Wastewater Department. Please call Amy Maybach, 303-464-5639 for additional information.

The following comments are specific to this tenant space.

- B-1 Using an occupant load factor of 30 square feet per occupant in the sales area, this tenant space has an occupant load of more than 50, which requires two exits separated by more than one-half of the overall diagonal distance of the area served. When the distance of travel to the mall exceeds 75 feet within the public area of a tenant space, not less than two means of egress shall be provided.

Egress shall not pass through an adjoining or intervening room except as provided for in Section 1013.2. Exits shall not pass through storerooms, closets, or rooms used for similar purposes such as the stockroom in accordance with Section 1013.2. A hallway shall be considered as an intervening room.

- B-2 Exit doors shall be openable without the use of a key or any special knowledge or effort. The unlatching of any leaf shall not require more than one operation. Delayed action panic hardware is only acceptable under the specific conditions of Section 1008.1.3.4. If special egress control devices are proposed, complete submittal of supporting information shall be made for building department review and approval prior to construction.
- B-3 The space noted as service corridor behind this tenant space is a one-hour fire-resistive corridor. All corridors shall comply with Section 1016, including corridors serving as a required second means of egress. All doors opening into the corridor shall be protected by tightfitting smoke- and draft-control assemblies having a fire-protection rating of not less than 20 minutes when tested in accordance with NFPA 252 or UL 10C as well as UL 1784. Doors and frames shall bear an approved 20 minute or greater "S" label, and shall have approved hardware. Doors shall be maintained self-closing or automatic-closing by actuation of a smoke detector per Section 715.3.7. Magnetic hold-open devices should specify smoke detector activation. Any duct penetrations into the corridor shall be protected by approved class II fire/smoke dampers in accordance with Sections 716.5.4.
- B-4 The space noted as service corridor behind this tenant space is a one-hour fire-resistive exit passageway. Doors into this space shall be protected by a fire assembly having a fire protection rating of not less than one hour with a maximum transmitted temperature end point not to exceed 450°F above ambient at the end of 30 minutes of fire exposure per Section 715.3.4. Doors into this exit passageway are limited to required exit doorways from normally occupied spaces in accordance with Section 1020.4. Doors serving stockrooms and not a means of egress from normally occupied spaces may be accepted only if separated from the exit passageway by a one-hour fire-resistive vestibule constructed as required for corridors.
- B-5 The new vestibule/corridor at the rear of the store is required to be a one-hour fire-resistive corridor in accordance with Section 1016. Please provide a cross-sectional detail showing how the wall and ceiling construction will meet the requirements of Sections 1016 and 708, this includes a rated ceiling assembly or a horizontal wall assembly. The intersection of the rated wall and ceiling assemblies shall include a tested assembly for the joint in accordance with Section 708.8.

- B-6 The display window platform shall be constructed of noncombustible framing. The decking for this platform may be fire-retardant treated plywood, provided that the platform is not more than 18 inches above the finished floor and the platform length is limited to 10 feet maximum. Penetrations into the platform shall be limited to steel, ferrous, or copper conduits and steel electrical outlet boxes that do not exceed 16 square inches in area. These penetrations shall be protected in accordance with IBC Section 712.
- B-7 The storefront glass shall be firmly supported on all four edges as required by Section 2403.2. Please provide revised details or submit an approved design verifying that the glazing system as shown is capable of supporting the required loads without exceeding the permitted deflection in accordance with Section 1605.
- B-8 Please provide details to show how a portion of the customer service or sales counter is accessible to persons with disabilities in accordance with IBC Section 1109.12.3 and ICC/ANSI A117.1, 1998, Section 904. Please include counter heights and dimensions of clear floor space.
- B-9 Please provide adequate details, including dimensions to show that at least one of each fixture in each restroom is accessible by the disabled in accordance with Section 1109.2 and ICC/ANSI A117.1, 1998. See ICC/ANSI A117.1, 1998, Chapter 6. Mirrors mounted above lavatories shall have the bottom edge or the reflecting surface 40 inches maximum above the floor. Coat hooks shall be mounted not higher than 48 inches above the floor (existing equipment may remain at 54 inches maximum above the floor). Please note the required protection of the exposed drain and supply pipes per ICC/ANSI A117.1, 1998, Section 606.6. Verify that the water heater under the lavatory does not interfere with the required clearances. Please show the required 42 inch dimension from the centerline of the water closet to any obstruction such as the lavatory in accordance with ICC/ANSI A117.1, 1998, Section 604.3. Restrooms shall have a 60" diameter turning circle for accessibility. Doors shall not swing into the required floor space for any fixture, and shall have a minimum clear width of 32 inches with door open 90 degrees per ICC/ANSI A117.1, 1998, Section 603.2.
- B-10 Please show the required 18 inch clear maneuvering space on the latch side of the door into the restroom and the office. All doors along the accessible route to all portions of the space shall comply with ICC/ANSI A117.1, 1998, Section 404.2.4.
- B-11 Please show the proposed slope for the proposed ramp. Please show the handrail extensions required on the ramp, at both the top and the bottom of the ramp. The extensions shall be on the same handrail, not extended on one side at the top and extended on the other side at the bottom. Handrail extensions

shall also meet the requirements of ICC/ANSI A117.1, 1998, Sections 405 and 505. Provide additional details as necessary to show compliance with IBC Section 1009.11.

- B-12 Please verify the required floor level on each side of the doors. The required floor or landing on each side of the door shall not be more than ½ inches lower than the threshold of the doorway per Section 1006.1.8.
- B-13 Provide a tactile sign indicating special accessibility provisions adjacent to each door to exit stairways, exit passageways, and the exit discharge in accordance with Section 1110.3, #2. Signs shall comply with ICC/ANSI A117.1, 1998, Section 703.
- B-14 Provide a tactile sign indicating special accessibility provisions adjacent to each door to accessible restrooms in accordance with Section 1110.1, #2. Signs shall comply with ICC/ANSI A117.1, 1998, Section 703.

Plumbing Requirements

- P-1 All hose bibbs, wall hydrants, or sinks with threaded hose fittings shall be provided with approved integral backflow prevention devices. All commercial occupancies shall have an approved reduced pressure backflow prevention device on the main water entry in accordance with International Plumbing Code Section 608 and local ordinance.
- P-2 Provisions shall be made to accommodate the potential movement of the expansive soils in relation to any piping system that is buried or ground supported and attached to the structure as well.
- P-3 Water heaters above the ceiling shall have a sealed metal pan with an approved drain in accordance with IPC Section 504.7. Access is required per IPC Section 502.3 and City and County of Broomfield policy for water heaters over 10 gallons in volume.
- P-4 One service sink is required in this space to comply with IBC Table 2902.1 and IPC Table 403.1. Please submit revised plans showing the type of fixture, its location, and an isometric drawing of the waste and vent piping system. Hot and cold water shall be provided at this fixture in accordance with IPC Section 607.1.
- P-5 Tempered water shall be provided to accessible hand-washing facilities in accordance with IPC Section 607.1.

Mechanical Requirements

- M-1 Flex ducts shall be listed and labeled. Install according to the listing, manufacturer's recommendations, using approved hangers and fittings.
- M-2 Ceiling spaces used as return-air plenums shall fully comply with all the provisions of IMC Section 601.2. Insulation exposed within plenums shall be approved for flame spread and smoke developed ratings as well as erosion characteristics due to airflow. All wiring within plenums shall be specifically approved for plenum use.
- M-3 Exhaust ducts under positive pressure, chimneys, or vents shall not pass through the plenum in accordance with IMC Section 601.3. Please provide written verification from mechanical designer that the toilet room exhaust ducts are not under net positive pressure. This may require coordination with the mall mechanical engineer.
- M-4 Provide smoke detectors located in the main return-air duct in systems exceeding 2,000 cubic feet per minute as required by IMC Section 606.2. Even though the individual air handlers are less than 2000 cfm, the system total exceeds 2000 cfm and smoke detector shut-offs shall be provided. Actuation of a duct smoke detector shall activate a visible and audible signal in accordance with IMC Section 606.4.1.
- M-5 All supply and return ducts shall be insulated per IMC Section 604 and IECC Section 803.2.8. All joints, seams and connections in ductwork shall be securely fastened and sealed with welds, gaskets, listed mastics, or listed tapes in accordance with IECC Section 803.2.8.
- M-6 A type II hood is required over the dishwasher in accordance with IMC Section 507.2.2.
- M-7 Please submit sizing calculations for the type I exhaust hood fans showing compliance with IMC Section 507.13. The capacity of the fans appears to be less than that required based on the size of the hoods. Please verify interlocks for the required makeup air per IMC Section 508.1. A complete one-hour fire-resistant shaft is required for the exhaust duct from the type I hood per IMC Section 506.3.10. Please submit additional details to show how this will be accomplished. A balance report shall be submitted to the building department prior to final inspection.
- M-8 Grease hood exhaust ducts using a proprietary duct wrap in lieu of a shaft shall provide complete documentation for the assembly. The duct wrap shall be installed by a contractor qualified as required by the product listing.

- M-9 Please verify minimum separation of 10 feet from plumbing vents, b-vents, and exhaust fans to air intakes for rooftop equipment in accordance with IMC Section 401.5.
- M-10 All new or relocated roof-mounted mechanical equipment shall be screened from view as required by the approved site development plan. Approval shall be obtained from the Broomfield Planning Division, 303-438-6284, for the style, material, and color of the screening. Please submit complete details, including engineered plans of roof attachment for wind load and snow load drifting impact.

Electrical Requirements

- E-1 Means of egress identification and illumination shall be provided in accordance with IBC Sections 1011 and 1006. Additional units may be required, field verify.
- E-2 Battery pack emergency lighting should be on the normal branch lighting circuit per NEC Article 700-12 (e).
- E-3 Transformers are not permitted in the return air plenum. See Item M-2 above.
- E-4 Intermediate or heavy duty ceiling systems (main runner members with a minimum load capacity of 12 pounds per linear foot) shall be used for support of lighting fixtures. Lighting fixtures weighing less than 56 pounds shall have 12 gage hangers attached to the grid at each fixture corner, and two No. 12 gage hangers connected from the fixture housing to the **structure above**. These additional wires may be slack. Fixtures weighing more than 56 pounds and pendant-hung fixtures shall be supported directly from the structure above by approved hangers.
- E-5 The electrical plans should be reviewed and approved by Westcor prior to start of construction.
- E-6 Flexible cords and cables shall not be used: as a substitute for the fixed wiring of a structure; where run through holes in structural ceilings, suspended ceilings, dropped ceilings, walls or partitions; or where concealed behind structural ceilings, suspended ceilings, or dropped ceilings. Please see NEC Article 400-8. Please revise detail of cable drops.
- E-7 GFCI protection shall be provided for all 125-volt single phase, 15 and 20 amp receptacles located within commercial kitchens in accordance with 2002 NEC 210.8 (B) #3.